

Date: Mon, 8 Aug 94 04:30:14 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #251
To: Ham-Ant

Ham-Ant Digest Mon, 8 Aug 94 Volume 94 : Issue 251

Today's Topics:

chimney mounted verticals
ftp's for antenna design needed
Ham-Ant Digest V94 #250 -Reply
how to build a single band vertical? (2 msgs)
JPole fundamentals
Ladder line length (was Re: G5RV grounding question)
MFJ vs. AEA IsoLoop?

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 4 Aug 1994 14:18:43 GMT
From: nntp.ucsb.edu!library.ucla.edu!europa.eng.gtefsd.com!newsxfer.itd.umich.edu!
zip.eecs.umich.edu!yeshua.marcam.com!usc!elroy.jpl.nasa.gov!lll-winken.llnl.gov!
fnnews.fnal.@@ihnp4.ucsd.edu
Subject: chimney mounted verticals
To: ham-ant@ucsd.edu

I'd like to get some input on mounting a vertical on a chimney (traditional
TV antenna location). My chimney is in excellent condition and is
reasonably large (about 4 feet X 3 feet at the top). It is also about
33 feet tall. I am considering an R5 or R7 or GAP Eagle. Anyone have
experience (good or bad!) with this type of installation?

John Walker
N2ZGC/AA

ps. Just passed the code test at 13WPM. My test was multiple choice. IMHO someone who is "stuck" at 10WPM could pass a multiple choice test at 13WPM.

Date: 6 Aug 1994 12:52:24 GMT
From: ihnp4.ucsd.edu!news.acns.nwu.edu!math.ohio-state.edu!howland.reston.ans.net!
europa.eng.gtefsd.com!sundog.tiac.net!news.sprintlink.net!tequesta.gate.net!
inca.gate.net!optronic@network.ucsd.
Subject: ftp's for antenna design needed
To: ham-ant@ucsd.edu

If anyone knows where I can get some shareware programs for antenna design, I would appreciate it. Also if you know of any good but reasonably priced commercial programs (for PC) I'd like your opinions on those too and where to buy.

Thanks, 73,

Bob B. KE4PGM optronic@gate.net

Date: 7 Aug 94 13:20:13 GMT
From: news-mail-gateway@ucsd.edu
Subject: Ham-Ant Digest V94 #250 -Reply
To: ham-ant@ucsd.edu

I'm on vacation until August 22. I'll read your message and reply when I return. If you need assistance with Emission Monitoring or Stack Testing, please contact Jerry Keefe or Jack Harvanek. Thanks

Alan Hicks

Date: 5 Aug 1994 16:23:29 GMT
From: ihnp4.ucsd.edu!ucsnews!newshub.sdsu.edu!nic-nac.CSU.net!
charnel.ecst.csuchico.edu!yeshua.marcam.com!zip.eecs.umich.edu!umn.edu!
newsdist.tc.umn.edu!uum1!aug2.augsburg.edu!petit@network.
Subject: how to build a single band vertical?
To: ham-ant@ucsd.edu

Most railroad antennas are 1/4 wave or the fire-cracker shortened verticals (which are far less efficient than what you have). I recommend the Larson LM-150 5/8ths vertical as high as you can get it. It will be better magnetically mounted to the roof of your truck than hard mounted

to the toolbox. This antenna is about 40" tall and knocks the socks off 1/4 wave and scanner (wide band) antennas. A 1/2 wave antenna does not have the impedance to match the coaxial cable and input to your receiver. It is no more efficient than a 1/4 wave (whose impedance matches). For 160 Mhz your vertical element should be 18" long on a 1/4 wave ground plane antenna. For information on a home-brew 5/8ths wave vertical see the antenna projects chapter in the ARRL handbook. It requires a 36" rod for a vertical element and a coil at the base of the antenna with about 10 turns of #10 or #12 wire. The coil must be made to withstand the wind load on top of your car; which is why I recommend a commercial antenna like the one from Larson.

In case you haven't discovered -- elevation is everything. Go to the top of a hill and listen and you will hear far more than if you use any exotic antenna. Most locomotive radios run 25 to 45 watts and have very inefficient antennas (mobile units are about the same). You will hear the dispatcher because they are on high towers, but will not hear the trains beyond about 10 miles. If you go to the top of a hill, you will hear trains, hand-helds, mobiles, defect detectors, etc. at distances far greater.

Date: Sat, 6 Aug 1994 13:46:58 GMT
From: ihnp4.ucsd.edu!news.acns.nwu.edu!math.ohio-state.edu!cs.utexas.edu!convex!news.duke.edu!concert!hearst.acc.Virginia.EDU!saips.cv.nrao.edu!news.cv.nrao.edu!dwells@network.ucsd.edu
Subject: how to build a single band vertical?
To: ham-ant@ucsd.edu

In article <31tp21\$qqm@aug2.augsburg.edu> Noel Petit
<petit@augsborg.edu> writes:
[some helpful comments about 5/8-wave whips and height deleted]

Sophisticated forms of mag-mount whips are appropriate for automobiles, but for home use one might consider using even more sophisticated antenna designs. Several years ago I asked a friend who is an electrical engineer and who is active in 2-meter amateur radio about high-performance 2-meter base station antennas. My thinking was that the RR band is only 10% higher frequency than the 2-meter band, so maybe we railfans can take advantage of the size and sophistication of the 2-meter market.

My friend gave me a copy of an advertisement from Advanced Electronic Applications (Lynnwood, WA, 206-775-7373) for their model ISO-144 "IsoPole" antenna; price in 1991 was \$60. The antenna consists of several conical elements stacked on top of each other along a mast 125 inches high; it has 50-ohm output impedance and apparently has no

ground plane elements. The ad asserts "maximum gain possible for [the length]", "zero-degree angle of radiation for maximum range", "typical SWR less than 1.4 to 1 or better across the entire band". Frequency coverage is said to be 135-160 MHz, which just barely includes the RR band at 160-161. It also says "2:1 VSWR bandwidth: 10 MHz @ 146 MHz", but I don't understand whether or not that would be a bad thing (at 160-161 we would be more than 10 MHz from 146).

I am interested in putting an antenna on the roof of my house, probably attached to the chimney, to operate with my scanner in the RR band. Are the claims and specifications quoted above reasonable from a technical point of view, and will an antenna like the one described above give enough performance gain at 160-161 MHz to justify its price? Are there better possibilities?

My friend also remarked "use a quality coax, can get losses". How important is this factor, and are any types or brands especially recommended? In my case, the cable run down through the attic to my basement shop will be at least 50 feet.

--

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520 Edgemont Road,	Charlottesville, Virginia	22903-2475 USA

Date: Sun, 7 Aug 1994 02:12:24 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!library.ucla.edu!csulb.edu!csus.edu!netcom.com!netcom16!faunt@network.ucsd.edu
Subject: JPole fundamentals
To: ham-ant@ucsd.edu

OK, one more question about this: Do any (or all) antenna analysis programs successfully model a Jpole?
73, doug

Date: 5 Aug 1994 23:40:50 GMT
From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!news.umbc.edu!eff!news.kei.com!ssd.intel.com!chnews!scorpion.ch.intel.com!cmoore@ames.arpa
Subject: Ladder line length (was Re: G5RV grounding question)
To: ham-ant@ucsd.edu

In article <31u5n9\$2ri@newsgw.mentorg.com>,
John Bate <jbate@rtp-nc.mentorg.com> wrote:
>

>I am using 450 ohm ladder line on my 80 1/2 wave dipole fed by a 9:1
>balun. The balun is fed by a short (2') length of 50ohm coax.
>For some reason my SWR is very high (3-oo) on all bands except 10m.
>john (ki7hs/4)

Hi John, Consider the following discussion to be approximations only. Assume your 80m 1/2 wave dipole has an impedance of 50 ohms on 4 MHz. Your SWR will be 9/1 (450/50) and there's absolutely nothing wrong with that SWR. 100 ft. of ladder-line is just about 1/2 wavelength at that frequency taking velocity factor into account so your 9/1 balun is seeing about 50 ohms. 50/9 is 5.5 ohms so you also have a 9/1 SWR on your 50 ohm coax and your transmitter will see that 5.5 ohms unless you have an antenna tuner. You will probably have a high SWR on all bands... The only way you can get a low SWR is to have the antenna impedance be near a purely resistive 450 ohms and I don't think that happens on any band. You were probably just lucky on 10m.

I think you are assuming that if you have a 450 ohm transmission line, you will be looking into 450 ohms at the generator end and that is not a valid assumption. The impedance you see can be almost any complex number on the Smith Chart and there's a bunch of 'em.

A combination of ELNEC and MicroSmith will model your antenna system and give you an idea of what you are up against. You have a good, efficient system there but your internal tuner may not have the range to match what you need to match. If it does, quit worrying and enjoy. If it doesn't, you need a broader range antenna tuner than the internal one.

73, Cecil, KG7BK, 00TC (Not speaking for Intel)

Date: 7 Aug 1994 04:03:51 GMT
From: newsgate.watson.ibm.com!watnews.watson.ibm.com!fo!uri@uunet.uu.net
Subject: MFJ vs. AEA IsoLoop?
To: ham-ant@ucsd.edu

Hi,
Opinions and comments are sought: how do you compare IsoLoop with MFJ 17<whatever it is>? Experience? Is it really pain in the <there> to tune the thing? Does it take forever to sweep the band?

Thanks! [E-mail replies are appreciated.]

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Regards,

Uri. uri@watson.ibm.com N2RIU

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End of Ham-Ant Digest V94 #251
